

AMENDMENTS TO THE CLAIMS:

Claims 1, 2, 3, and 5-17 are presented for examination. Claim 4 has been cancelled. Claim 1 has been amended. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A process for forming a semiconductor film, comprising the steps of:

applying a semiconductor particle dispersion liquid to a substrate surface by spray coating in such a manner that the atomized droplets of the dispersion liquid discharged from the spray coater have a mean diameter of 30 μm or less; and

drying the coating to form a porous semiconductor film,

the semiconductor particle dispersion liquid being a dispersion in methanol and/or ethanol of particles of at least one semiconductor selected from the group consisting of metal oxides, perovskites, metal sulfides, and metal chalcogenides.

Claims 2 (Original): The process according to claim 1, wherein the substrate is a thermoplastic resin substrate.

Claim 3 (Original): The process according to claim 2, wherein the thermoplastic resin substrate is a high polymer film.

Claim 4. (Cancelled)

Claim 5 (Original): The process according to claim 4, wherein the semiconductor particles are titanium oxide particles.

Claim 6 (Original): The process according to claim 5, wherein the titanium oxide particles are anatase-type titanium oxide particles.

Claim 7 (Original): The process according to claim 1, wherein the semiconductor particle dispersion liquid has a solids content of about 1 wt.% to about 40 wt.%.

Claim 8 (Original): The process according to claim 1, wherein the semiconductor particle dispersion liquid has a viscosity of about 0.001 Pa·sec to about 2 Pa·sec.

Claim 9 (Original): The process according to claim 1, wherein the atomized droplets of the dispersion liquid discharged from the spray coater have a mean diameter of about 1 μm to about 25 μm .

Claim 10 (Original): The process according to claim 1, wherein the coating is dried by heating at a temperature of about 200 °C or lower or by irradiation with electromagnetic waves.

Claim 11 (Original): The process according to claim 10, wherein the coating is dried by microwave irradiation.

Claim 12 (Original): A photocatalyst comprising a porous semiconductor film formed on a substrate by the process according to claim 1.

Claim 13 (Original): The photocatalyst according to claim 12, wherein the porous semiconductor film is a porous titanium oxide film.

Claim 14 (Original): The photocatalyst according to claim 13, wherein the porous titanium oxide film is a porous anatase-type titanium oxide film.

Claim 15 (Original): A photoelectrode for dye-sensitized solar cells, comprising a porous semiconductor film formed by the process according to claim 1 on an electrically conductive transparent layer formed on either a glass plate or a transparent high polymer film.

Claim 16 (Original): The photoelectrode according to claim 15, wherein the porous semiconductor film is a porous titanium oxide film.

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Claim 17 (Original): The photoelectrode according to claim 16, wherein the porous titanium oxide film is a porous anatase-type titanium oxide film.